Boll. Malacologico	**26** (1990)	(10-12)	165-168	Milano 31-3-1991

Constantine Mifsud (*)

VITREOLINA PHILIPPI (PONZI, DE RAYNEVAL & VAN DEN HECK, 1854) (EULIMIDAE) FOUND LIVING ON THE ECHINOID *PARACENTROTUS LIVIDUS* (LAMARCK) IN INFRALITTORAL MALTESE WATERS. (**)

KEY WORDS: Gastropoda, Eulimidae, Host species, Mediterranean sea, Malta

Summary

Examination of two Mediterranean sea-urchins for the possible presence of Eulimid species was carried out. *Vitreolina philippi* (PONZI, DE RAYNEVAL & VAN DEN HECK) was found to be frequent, sometimes common on *Paracentrotus lividus* (Lamarck), but very rarely on *Arbacia lixula* (L).

Riassunto

È stato effettuato un controllo su due diverse specie di ricci di mare, con lo scopo di verificare la possibile presenza di Eulimidae. In effetti *Vitreolina philippi* (PONZI, DE RAYNEVAL & VAN DEN HECK) risultò frequente, talora persino comune su *Paracentrotus lividus* (LAMARCK), ma rarissima su *Arbacia lixula* (L.).

Introduction

With the very recent discovery of the Eulimid species *Sabinella bonifaciae* (NORDSIECK) and *Nanobalcis nana* (MONTEROSATO) parasitizing the sea-urchin *Cidaris cidaris* (L.) (WARÉN & MIFSUD 1990; MIFSUD, in press) and due to the fact that numerous dead Eulimid specimens frequently appear in beached shell grit from several parts of the Maltese Islands, a study on two of the common shallow water echinoids seemed appropriate.

Material and method

Sea-urchins were collected live from various stations around the Maltese Islands. All stations are unsheltered and open to the prevailing winds. The sea-urchins were collected during short free dives at one to four metres depth. They were either handpicked or gently levered with a short

(*) 4, Shepherd's Str., Rabat, Malta.
(**) Lavoro accettato il 12 dicembre 1990

metal hook. This was done so as to disturb the echinoids as little as possible. Immediately a sea-urchin was collected it was transferred to a large (thick polythene) bag. Some of the sea-urchins were reserved for microscope investigation, while the majority of the specimens were individually washed or «rinsed» very quickly in fresh water and replaced in their natural habitat.

Each species of sea-urchin was collected and washed separately to make sure that one gets to know the host species. The samples of fresh water were then filtered through a fine mesh sieve and the filtrate examined under the microscope. This treatment made it possible to determine; (i) the various Eulimid species hosted by the sea-urchins and (ii) their frequency.

Microscopic examination of the sea-urchins was carried out to establish where on the host the Eulimids were likely to be. This was not at all easy because; (i) they are screened by the numerous mobile spines and the pedicellariae of the host, (ii) the very small number of Eulimids present (some carrying none at all) and (iii) they could be found anywhere on the test of the host. These *Vitreolina* specimens were usually found hidden amongst the numerous pedicellariae and the tube feet but never on the spines. The maximum number of specimens on a host never exceeded two and only rarely were they found to be close to each other. Although during collection the sea-urchins took a lot of shaking about, when examined individually the Eulimids could still be found on the particular host.

Discussion

Although *P. lividus* and *A. lixula* are absent from sheltered areas such as St. Paul's bay, Salina bay and Marsaxlokk bay, they can still be found at many open and unsheltered areas. A few years ago the populations of both echinoid species were nearly wiped out because of some mysterious disease. Both echinoids share the same habitat. They are found in shallow waters on rocky substrates, either inside well fitting cavities or else under rocks and boulders. *P. lividus* is by far the commoner of the two echinoids. *V. philippi* seems to prefer *P. lividus* and this suggests a parasitic relationship. Only in one instance specimens (juveniles) of *V. philippi* were observed on *A. lixula*. A few live specimens of *V. philippi* were also found in weed-washings from an area with a high *P. lividus* concentration (station 3). This may confirm previous observations (Warén 1981, 1984; and Fretter and Graham, 1982) that *V. philippi* may leave the host and not be present on it at all times. Dr. Warén informed me (in litt.) that he had similar results from Sicily this summer.

Table

A; *V. philippi*, station 3(x 21,6)
B; *V. philippi*, animal (x 22,5)
C; *V. philippi*, on host *P. lividus* (x 9)


A


B


C